REMARKS

Applicants filed an initial amendment on October 19, 2005, responsive to the Office Action mailed May 19, 2005. This supplemental amendment is submitted in response to a telephone inquiry received from Examiner Hung.

In the May 19, 2005 Office Action, Claims 1-18 were rejected based on prior art. Claims 19-38 were withdrawn. As indicated in the earlier filed amendment, applicants have canceled Claims 19-38 to advance the case toward allowance. This cancellation of claims is without prejudice to applicants' right to present such claims or other claims for examination in one or more divisional patent applications. Claim 11 was indicated as including allowable subject matter.

Applicants have carefully reviewed the Office Action and the cited references, and request reconsideration of the application in view of the foregoing amendments; the remarks set forth in applicants' October 19, 2005, amendment; and the additional remarks below.

In applicants' earlier filed amendment, the specification was amended in accordance with the Examiner's suggestions in paragraph 2 of the Office Action. The amended specification should therefore resolve the concerns raised in the Office Action. Additionally, applicants' earlier filed amendment amended Claims 8 and 15 to address the informalities identified in paragraph 3 of the Office Action. Claims 7 and 14 were also amended to indicate input data values, and Claim 17 was amended in regard to the step of modifying the at least one data value.

New Claims 39 and 40 were added. Claim 39 is directed to the subject matter of Claim 11 which was indicated in the Office Action as being allowable. Claim 39 is thus believed to be in patentable form. By this supplemental amendment, applicants have canceled Claim 11 and amended Claims 12 and 13 to depend from Claim 39.

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Applicants request reconsideration and allowance of Claim 1 for the reasons set forth in the October 19, 2005 amendment. Claims 2-5 and 7-10 have been amended or corrected in circumstances as appropriate to overcome rejections under 35 U.S.C. 112 and should also be allowed, both for their dependence on allowable Claim 1 and for the additional subject matter recited therein.

As indicated above, Claim 39 is in patentable condition. The Examiner requested clarification of the claim elements "successively sweeping through a plurality of bands of input data values in a first direction" and "successively sweeping through a plurality of bands in a second direction, the second direction being different than the first direction."

These elements refer to actions taken when applying a transform to data representing a signal. The specification describes signals comprised of n different subsignals or "bands" merged together. See, e.g., page 42, lines 21-27 of the present application. In some circumstances, for example, a band may include data reflecting high frequency components of a signal while another band includes data reflecting low frequency components of the signal.

As is understood in signal processing, a signal may be transformed by application of a transform to the data representing a signal. The transform is applied to the data points in the signal in a successive fashion to eventually transform the signal. The terminology "successive sweeping through a plurality of bands" in Claim 39 refers to this process of acting on successive data in each band of a signal. Claim 39 further defines the "successive[] sweeping" as including "successively adding to each band during each successive sweep in the first direction [or second direction] the linear combination of unmodified values in the plurality of input data values, the linear combination being a rounded linear combination of the plurality of input data values in preceding bands." In one aspect, reference may be made to the specification at page 45, lines 4-10, which reads as follows:

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If a transformation is given by an elementary matrix which adds some modification (combination of shifts and constant multiples) of band i to band j, then we get an integer-to-integer approximation to the transformation by simply rounding the modification of band i to an integer before adding it to band j. This is easily invertible: simply subtract the same rounded modification of band i from band j. This applies more generally to matrices given by unit triangular matrices (lower or upper triangular matrices whose diagonal entries are all 1).

For additional reference to the specification, see, e.g., the process described at page 56, line 8 *et seq*. Specifically, lines 13-28 read as follows:

Suppose that the band currently containing the constant signal is band i, and we want to add it to band j : for each entry x in band i, we are to add cx to the nearest entry to the right in band j and subtract cx from the nearest entry to the left in band j. Let j' be a band adjacent to j which is not band i. Now perform the following procedure:

subtract c times band j' from band j;
move band i up to band $j'-1$;
add band $j'-1$ to band j';
move band $j'-1$ down to band $j'+1$;
subtract band $j'+1$ from band j';
move band $j'+1$ up to band i;
add c times band j' to band j;
move band i up to band $j'-1$;
subtract band $j'-1$ from band j';
move band $j'-1$ down to band $j'+1$;
add band $j'+1$ to band j';
move band $j'+1$ up to band i.

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The 9-7 wavelet is described in a specific implementation. See pages 63 to 69 of the present application. As is known in wavelet transformation, one or more filters comprised of filter coefficients are applied to data points in a signal in which neighboring data plays a part in the transformation of the data point. Depending on the type of data, the data may be transformed by "successively sweeping" the data in directions such as horizontal and vertical, for instance. By computing factorizations and error bounds as described in the present application, an integer-to-integer transformation of the signal can be accomplished, with an inverse transform that yields the original signal.

As to Claims 12-18, applicants note these claims depend either directly or indirectly from Claim 39, which as discussed above, is in patentable condition. Claims 12-18 should also be allowed.

Lastly, for the reasons set forth in the October 19, 2005, amendment, applicants further submit that Claim 40 is patentable over the prior art and should be allowed.

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CONCLUSION

Applicants thank the Examiner for the opportunity to present this supplemental amendment and clarify aspects of the claims. As the pending claims in the present amendment are believed to be in condition for allowance, applicants request action to that end. Should any issues remain needing resolution prior to allowance of the application, the Examiner is invited to further contact the undersigned attorney at (206) 695-1712.

Respectfully submitted,

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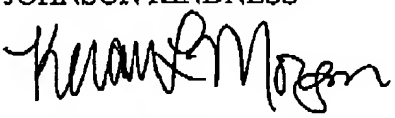

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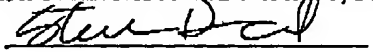
I hereby certify that this correspondence is being transmitted via facsimile to the U.S. Patent and Trademark Office, Group Art Unit 2625, Examiner Yubin Hung, at facsimile number 571.273.8300 on December 5, 2005.

Date: 12·5·2005 

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